

TSEYEB, YA. YA.

Fresh-water Biology

Data on chemical affinity, hydrobiology, and biology of the reservoirs in the Orlov Province. Trudy Soveshch. ZIN No. 1, pt. 1, 1951.

MONTHLY LIST OF RUSSIAN ACCESSIONS, LIBRARY OF CONGRESS, JUNE 1952. UNCLASSIFIED.

TSEYEB, Ya.Ya.

Data on the chemistry, hydrology, and biology of waters in Orel Province.
Trudy prebl.1 tem. sov. no.1:49-55 '51. (MIRA 9:7)
(Orel Province--Hydrology)

AUTHORS:

Gurvich, V.V. and Tseyeb, Ya.Ya.

sov/21-56-10-22/27

TITLE:

A Microbenthometer for the Quantitative Sampling of Micro-benthos (Mikrobentometr dlya vzyatiya kolichestvennykh prob mikrobentosa)

PERIODICAL:

Dopovidi Akademii nauk Ukrains'koi RSR, 1958, Nr 10, pp
1120-1123 (USSR)

ABSTRACT:

The authors describe a device (microbenthometer), with the aid of which silt samples can be taken from the bottom of water reservoirs for counting benthonic microfauna. This device was designed on the principle of taking monolithic samples, and represents an improved version of the Tsayeb tube [Ref 2]. The main parts of the device are manufactured by the Leningrad "Gidrometprilad" plant. The authors also give a description of the functioning of this device and the manner in which it should be operated. There are

Card 1/2

SOV/21-58-10-22/27

A Microbenthometer for the Quantitative Sampling of Microbenthos

2 photos and 2 Soviet references.

ASSOCIATION: Institut hidrobiologii AN UkrSSR (Institute of Hydrobiology of the AS UkrSSR).

PRESENTED: By Member of the AS UkrSSR, A.P. Markevich

SUBMITTED: May 10, 1958

NOTE: Russian title and Russian names of individuals and institutions appearing in this article have been used in the transliteration.

- 1. Inland waterways--Analysis
- 2. Sedimentation--Sampling
- 3. Sedimentation--Testing equipment

Card 2/2

TSEYEB, Ya. Ya.

Composition and quantitative development of microbenthonic fauna of
the lower Dnieper Valley and the Crimean bodies of water [with
summary in English]. Zool. zhur. 37 no.1:3-12 Ja '58. (MIRA 11:2)

1. Institut hidrobiologii AN USSR, Kiyev.
(Dnieper Valley—Fresh-water fauna) (Crimea—Hydrobiology)

TSEYEB Ya. Ya.

AUTHOR: Tseyeb, Ya. Ya., and Olivari, G.A. 26-58-6-31/56

TITLE: Experience with the Transportation of Feed Invertebrates for Introduction (Opyt perevozki kormovykh bespozvonochnykh dlya introduktsii)

PERIODICAL: Priroda, 1958 ⁴⁷ Nr 6, p 104-105 (USSR)

ABSTRACT: In the summer of 1956 and 1957 thirty-six million polychaetes, oligochaetes, mollusks and crustaceans were transferred from the Dnepr delta and the Ingulets river to the water reservoir of Kakhovka. Two floating-aquarium vessels were used, each with a holding capacity of 30 cu m of water and a 0.75 m draught. They were also furnished with bottom sand and pond weeds to create conditions similar to those in the river. It took two days to cover the distance of 280-300 km. Such a mass transportation of invertebrates is the best solution in cases where such animals were urgently needed in large quantities to feed fish. There are 2 photos.

ASSOCIATION: Institut hidrobiologii Akademii nauk USSR (Kiyev)
(Institute of Hydrobiology of the UkrSSR Academy of Sciences,
Kiev)

Card 1/1 1. Hydrobiology 2. Fishes-Feeding

TSEYEB, Ya.Ya.

Zooplankton in the Soviet section of the Danube River. Trudy Inst.
gidrobiol.AN URSR no.36:103-127 '61. (MIRA 14:8)
(Danube Delta--Zooplankton)

YEMCHENKO, A.I. , otv. red.; TOPACHEVSKLY, O.V.
[Topachevs'kyi, O.V.], doktor biol. nauk, glav. red.;
ROLL, Ya.V., red.[deceased]; NOVCHAN, V.A., red.;
VLADIMIROV, V.I.[Vladimirov, V.I.], doktor biol. nauk,
red.; VINOGRADOV, K.O.[Vynogradov, K.O.], doktor biol.
nauk, red.; TSEYEB, Ya.Ya.. doktor biol. nauk, red.;
SAL'NIKOV, M.Ye [Sal'nykov, M.IE.], kand. biol. nauk,
red.; ALMAZOV, O.M., kand. khim. nauk, red.; ZEROV, K.K.,
kand. biol. nauk, red.

[Some problems of the physiology of digestion and
metabolism in fishes] Deiaki pytannia fiziologii tav-
lennia ta obminu rechovyn u ryb. Kyiv, Vyd-vo AN URSR,
1962. 115 p. (Its Pratsi) (MIRA 17:11)

1. Chlen-korrespondent AN Ukr.SSR (for Yemchenko, Roll,
Movchan).

TSEYER, Ye.Ya.

Effect of the streamflow regulation on the zooplankton of the
lower Dnieper River. Pratsi Inst. hidrobiol. AN URSR no.39;
52-65 '63. (MIRA 17:12)

TSEYEB, Ya.Ya.

Ivan Ivanovich Puzanov; on his 80th birthday, 1885~ . Gidrobiel.
zhur. l no.3:66-68 '65. (MIRA 18:6)

TOPACHEVSKIY, A.V.; TEL'YEB, Ya.Ya.

Freshwater hydrobiology at the present stage of its development.
Gidrobiol. zhur. 1 no.1:5-11 '65.
(MTRA 18:5)

1. Institut hidrobiologii AN UkrSSR, Kiyev.

TOPACHEVSKIY, O.V.[Topachevs'kyi, O.V.], glav. red.; MOVCHAN, V.A.,
red.; AL'AZOV, O.M., doktor geogr. nauk, red.;
VLADIMIROV, V.I.[Vladymyrov, V.I., doktor biol. nauk, red.;
VINOGRADOV, K.O.[Vynohradov, K.O.], doktor biol. nauk, red.;
TSEYE3, Ya.Ya.[TSeeb, IA.IA.], doktor biol. nauk, red.;
SAL'NIKOV, M.Ye.[Sal'nykov, M.IE.]. kand. biol. nauk, red.;
ZEROV, K.K., kand. biol. nauk, red.

[Desna River within the boundaries of the Ukraine; sanitary-hydrobiological and hydrochemical characteristics] Desna v mezhakh Ukrayiny; sanitarno-hidrobiologichna ta hidrokhimichna kharakterystyka. Kyiv, Vyd-vo "Naukova dumka," 1964. 158 p.

(MIRA 17:7)

1. Akademiya nauk URSR. Kiev. Instytut hydrobiologii. 2. Chlen-korrespondent AN Ukr.SSR (for Topachevskiy). 3. Vsesoyuznya akademiya sel'skokhozyaystvennykh nauk imeni V.I.Lenina i chlen-korrespondent AN Ukr.SSR (for Movchan).

TSEYEB, Ya.Ya.

Effect of the dam of the Kakhovka Hydroelectric Power Station on the
food supply for fishes in the lower Dnieper River. Vop. ekol. 5:
236-238 '62. (MIRA 16:6)

1. Institut gidrobiologii AN UkrSSR, Kiyev.
(Dnieper River--Fishes--Food)

TSEYEB, Ya.Ya.; ROLL, Ya.V.[deceased]; ZEROV, K.K.; VLADIMIROVA, K.S.
[Vladymyrova, K.S.]; OLIVARI, G.A.[Olivari, H.A.]; GURVICH,
V.V.; BIRGER, T.I.[Birher, T.I.]; MALYAREVSKAYA, O.Ya.
[Maliarevs'ka, O.IA.]; CHORNOGORENKO, M.I.[Chernohorenko,
M.I.]; LITVINOVA, M.O.[Lytvynova, M.O.]; ANDRIYCHUK, M.D.,
red.

[Kakhovka Reservoir; a hydrobiological outline] Kakhovs'ke
vodoimyshche; hidrobiologichnyi narys. Kyiv, Naukova dumka,
1964. 303 p. (MIRA 17:8)

1. Akademiya nauk UkrSSR, Kiev. Instytut hidrobiologii.

SOV/137-59-1-1667

Translation from: Referativnyy zhurnal. Metallurgiya, 1959, Nr 1, p 221 (USSR)

AUTHOR: Tseyger, B. M.

TITLE: Die Stamping of Forgings and Examples of a Novel Stamping Technology Adopted at the Minsk Tractor Plant (Chekanka pokovok i primery novoy tekhnologii shtampovki na Minskem traktornom zavode)

PERIODICAL: V sb.: Materialy Konferentsii po usoversh. tekhnol. obrabotki metallov davleniyem. Minsk, Belorussk. un-t, 1958, pp 59-64

ABSTRACT: Examples are given illustrating the effectiveness of the method of die stamping of stamped forgings; a formula for the computation of forces absorbed during combined die-stamping and straightening operations is presented together with a table of characteristics of certain forgings made by means of die stamping. In order to reduce the consumption of rolled stock and lower the amount of man-hours consumed in the manufacture of forgings, the contours of the latter are changed to conform approximately to the contours of the finished article, and the operations of stamping are transferred to mechanical presses. These measures when introduced in the forging shop, resulted in a saving of 400,000 rubles. M. Ts.

Card 1/1

137-58-4-7126

Translation from: Referativnyy zhurnal, Metallurgiya, 1958, Nr 4, p 117 (USSR)

AUTHOR: Tseyger, B. M.

TITLE: Certain Improvements in Forging at the Minsk Tractor Plant
(Nekotoryye usovershenstvovaniya v kuznechnom proizvodstve
Minskogo traktornogo zavoda)

PERIODICAL: V sb.: Materialy konferentsii po usoversh. tekhnol. goryachey
shtampovki. Minsk, AN BSSR, 1957, pp 57-64

ABSTRACT: A description is presented of a number of improvements in
techniques and tools used in forging: improvement in the design
of die mounts on drop-forging hammers and introduction of hard-
ening of seats, combination of a number of operations on a single
die, use of a vibration apparatus for descaling cylindrical blanks,
employment of upsetting and reduction of tubes by means of the
forging machine.

R. P.

1. Forging--Equipment 2. Forge presses--Applications

Card 1/1

TSEYGER, I
TSEYGER, I., inzh.

Automatic piercers used for opening cans containing carbide.
Bezop. truda v prom. 2 no.1:33 Ja '58. (MIRA 11:1)
(Containers)

AUTHOR:

Tseyger, I.A., Mining Engineer

127-58-1-10/28

TITLE:

Experience in Drilling Shot-Holes with 40 mm - Diameter
Boring Bits (Opyt burenija shputov koronkami diametrom
40 mm)

PERIODICAL:

Gornyy Zhurnal, 1958, Nr 1, pp 37-38 (USSR)

ABSTRACT:

At the start of 1957, the Zapsibzoloto Trust received 6,000 removable boring bits, 40 mm in diameter, strengthened with a hard alloy. Experimental drilling was performed in a drift of 5 sq m cross section, in rocks of the hardness 20, according to Professor Protod'yakonov's classification. Bore holes were drilled with a KTsM-4 drilling machine under air pressure of 5.5 atm, with drilling steel 25 mm in diameter. Experiments showed the following advantages of 40-mm boring bits over 46-mm bits: 1) The drilling speed increases 35 to 50%, attaining 168 mm/min; 2) The consumption of materials per ton of ore decreases 30 to 35%; 3) The effectiveness of blast work increases 25 to 30%. The only drawback of 40-mm boring bits, is the insufficient thickness of their plates. These should be increased from 8 to 10 mm. The author suggests that the experimental plant at the Vsesoyuznyy nauchno-issledovatel'skiy institut buro-

Card 1/2

127-58-1-10/78

Experience in Drilling Shot-holes with 40 mm - Diameter Boring Bits

voy tekhniki (All-Union Scientific Research Institute of Drilling Technique), formerly Povarovskiy plant, manufacture boring bits 40 mm in diameter according to the orders from mining enterprises.

The article contains 2 tables.

ASSOCIATION: Trest Zapsibzoloto (Trust Zapsibzoloto)

AVAILABLE: Library of Congress

Card 2/2 1. Drills-Test results 2. Drills-Applications 3. Mining
 engineering-USSR

TSEYGER, I.A., gornyy inzh.

Hole boring with 40mm bore bits. Gor. zhur. no.1:37-38 Ja '58.
(MIRA 11:3)

1. Treat Zapsibzoloto.
(Boring)

TSEYKO, Anatoliy Iosifovich; KOZHEVNIKOV, Konstantin Timofeyevich;
ZHILYAKOVA, O., red.; FISENKO, A., tekhn. red.

[Irrigation of vineyards] Oroshenie vinogradnikov. Simfe-
ropol', Krymizdat, 1961. 93 p. (MIRA 15:4)

1. Vsesoyuznyy nauchnoissledovatel'skiy institut vinodeliya i
vinogradarstva "Magarach" (for Tseyko). 2. Krymskaya optyno-
meliorativnaya stantsiya (for Kozhevnikov).
(Crimea--Grapes--Irrigation)

AUTHOR: Tseyler, V.M.

SOV-5-58-3-9/39

TITLE: Boring Mollusks in Albian Deposits of the Crimean Peninsula
(Sverlyashchiye mollyuski iz al'bskikh otlozheniy Kryma)

PERIODICAL: Byulleten' Moskovskogo obshchestva ispytateley prirody,
Otdel geologicheskiy, 1958, Nr 3, pp 132-133 (USSR)

ABSTRACT: This is a brief description of the activities of numerous
Albian boring mollusks (*Lithodomus*), found on the abraded
surface of Kimeridgian-Tithonian limestones in the valley
of the Chernaya river of the Crimean peninsula.
There is 1 photo and 1 sketch.

1. Marine borers--Crimea

Card 1/1

TSEYLIKMAN, A. G.

CA

30

Generation of static electricity [in rubber factories] and its prevention. A. G. Tselikman. *Leskaya Prom.* 1948, No. 3-4, 6-8.—Static electricity generated particularly on spreading machines is a source of danger. This was effectively overcome with the aid of a Chapman ionizer as modified by the author. M. Busch

AUTHORS:

Tseylin, L. A., Tarasova, T. Ye.

SOV/151-58-10-5/11

TITLE:

Testing of Graphite Fire-Bricks in Steel Teeming Ladles
(Ispytaniya grafito-shamotnogo kirkicha v stalerazlivochnykh
kovshakh)

PERIODICAL:

Ogneupory, 1958, Nr 10, pp. 461-467 (USSR)

ABSTRACT:

A method that makes use of the semi-dry process and of burning without capsules was developed in order to simplify, and economize in, the production of these bricks. The composition and the properties of graphite fire-bricks produced in the UNIIO and Chasov-Yarskiy zavod im. Ordzhonikidze (Chasov Yar imeni Ordzhonikidze Plant) testing plants are listed in tables 1 and 2. Their heat resistance is high. The bricks were tested by lining 7, 60 and 140 ton teeming ladles, in which they did not show any wear at the joints. A.A. Yeltysheva took part in the tests (Fig 1). The use of graphite fire-bricks did not affect the carbon content of the steel. The changed chemical composition of the slag is seen in table 3. In figures 2 and 3 the graphite fire-brick lining of a 140 ton teeming ladle is shown after 9 and 3 castings,

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· Testing of Graphite Fire-Bricks in Steel
Teeming Ladles

SOV/131-58-10-5/11

respectively. Table 4 compares the wear of graphite fire-bricks to that of regular fire-bricks. It is practical to use graphite fire-bricks as lining of smaller teeming ladles for casting highly manganeseiferous steels, i.e. only for the lining of the lower part of the ladle. Further tests with these bricks ought to be carried out.
There are 3 figures, 4 tables, and 13 references, 11 of which are Soviet.

ASSOCIATION: Ukrainskiy nauchno-issledovatel'skiy institut ogneuporov
(Ukrainian Scientific Research Institute for Refractory Products)

Card 1/2

TSEYLYON, D., inzh.

How to determine the rigidity of concrete mixes. Stroitel' no.7:
28 Jl '60. (MIRA 13:8)
(Concrete--Testing)

TSEYLYON, D.I., inzh.; FRENKEL', I.M., kand. tekhn. nauk, red.; NIKOLAYEVA,
N.M., red.; SHEVCHENKO, T.N., tekhn. red.

[High-strength concretes.] Vysokoprochnye betony. Moskva,
Gosstroizdat, 1963. 66p. (Akademicheskaya stroitel'stva i arkhitektury
SSSR. Institut betona i zhelezobetona, Perovo. Nauchnye soob-
shcheniya, no.15) (MIRA 16:11)

TSEYLO, D.I., inzh.

High-strength concretes. Trudy NIIZHB no.32:4-20 '63.
(MIRA 17:1)

FRENKEL, I.M., kand. tekhn. nauk; TSEYLYON, D.I., mladshiy nauchnyy sotr.;
STRASHNYKH, V.P., starshiy red.izd-va; BOROVNEV, N.K., tekhn.
red.

[Instructions for designing the computing and checking the strength
of the grades of concrete] Instruktsiia po raschetu sostava i kon-
troliu prochnosti vysokomarochnykh betonov. Moskva, Gos.izd-vo lit-
ry po stroit., arkhit. i stroit. materialam, 1962. 30 p.
(MIRA 15:6)

1. Akademiya stroitel'stva i arkhitektury SSSR. Institut betona i
zhelezobetona, Perovo.

(Concrete—Testing)

14(5)

SOV/127-59-3-16/22

AUTHORS: Rogov, Ye.Ya. and Tseymakh, B.M., Engineers

TITLE: Automation in Foreign Mines. (Avtomatizatsiya na podzemnykh rudnikakh za rubezhom.)

PERIODICAL: Gornyy zhurnal, 1959, Nr 3, pp 57-59

ABSTRACT: The authors reviews the state of automation of different mining operations in Canada, the US, West Germany, England, Switzerland and South Africa. There are 24 foreign references.

Card 1/1

TSEYMAKH, B.M.

Seminar and exhibition on analytical apparatus. Zav.lab. 28
no.11:1400-1401 '62. (MIRA 15:11)
(Automatic control) (Scientific apparatus and instruments--
Exhibitions)

TSEYMAKH, A. L. Cand Tech Sci -- (diss) "Effect of the condition of surfaces upon the recurrent dynamic resistance of certain steels." Barnaul, 1958. 13 pp (Min of Higher Education USSR. Odessa Polytechnic Inst), 100 copies (KL, 52-58, 103)

TSEYMLIN, L. A.

"'Fosfoamidaz' Activity of the Cerebral Brain of the Rat," Biochemistry (Biokhimiya),
Vol. 17, Issue No. 2, Press of the AS USSR, Moscow, 1952.

TSEYMLIN, M.

N/D
741.31
.V32

Biografiya Odnoy Mashiny (Biography of one Machine) Rasskazy
o Sovetskikh Ugol'nykh Kombaynakh (by) I. Vasil'kov (l) M. Tseymlin.
Moskva, Uzletekhizdat, 1955.

97 P. Illus.

BEREgovskiy, V.Ye.; Vasilenko, M.I.; Velier, R.L.; Verblovskiy, A.M.;
Verner, B.F.; Voydalovskaya, Ye.N.; Vol'skiy, A.N.; Glazkovskiy, A.A.;
Granovskiy, B.L.; Greyver, N.S.; Gudima, N.V.; Dolgopołowa, V.I.;
Karchevskiy, V.A.; Kovacheva, Ye.B.; Kudryavtsev, P.S.; Lebedev, A.K.;
Lisovskiy, D.I.; Likhnitskaya, Z.P.; Matveyev, N.I.; Mel'nikskiy, A.N.;
Mironov, A.A.; Mikheyeva, A.A.; Murach, N.N.; Okun', A.B.; Ol'khov, N.P.;
Osipova, T.B.; Pavlov, V.P.; Rotinyan, A.L.; Sažhin, N.P.; Sevryukov, N.N.;
Sidorov, P.M.; Sobol', S.I.; Kheyfets, V.L.; Tseyner, V.M.;
Shakhnazarov, A.K.; Sheyn, Ya.P.; Sheremet'yev, S.D.; Sherman, B.P.;
Shishkin, N.N.; Shlobov, A.P.

Georgii Ivanovich Blinov. TSvet.met. 28 no.6:62 N-D '55.
(MIRA 10:11)
(Blinov, Georgii Ivanovich, 1911-1955)

TSEYNER, YE. M.

SIANO, V. I., TSEYNER, YE. M.

Single penicillin dose in treatment of gonorrhea. Vest. vener.
No. 6, Nov.-Dec. 50. p. 43-50

1. Of Oktyabr'skiy Rayon Skin-Venereological Dispensary (Head --
Ye. M. Tsayner) and of the Municipal Venereological Dispensary
(Head Physician -- D. N. Plishkin), Sverdlovsk.

CLML 20, 3, March 1951

S/0185/64/009/003/0242/0250

ACCESSION NR: AP4022695

AUTHOR: Tseypek, Yan

TITLE: On polarization effects in the heavy particle stripping reaction

SOURCE: Ukrayins'kyi fizichnyi zhurnal, v. 9, no. 3, 1964, 242-250

TOPIC TAGS: stripping reaction, heavy particle stripping reaction, nuclear polarization, unpolarized target, polarized target, polarized deuteron scattering, deuteron scattering, angular scattering distribution

ABSTRACT: The angular distribution and polarization of the products in the heavy particle stripping reaction with polarized deuterons as well as polarized initial nuclei are treated theoretically. Polarization of protons and the effect of the polarization of incident deuterons in the case of heavy particle stripping were considered by Robson (Nucl. Phys. 33, 594, 1962). The approach of this paper is a generalization of and a supplement to Robson's paper, extended to the case of oriented nuclei. A general formula is obtained, which specifies both the state of polarization and the angular distribution of the reaction products. Detailed analysis is devoted to the case when the initial nuclei are polarized. A relationship between the asymmetry in the angular proton scattering distribution for

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ACCESSION NR: AP4022695

polarized initial nuclei and the polarization of the final nuclei when the initial nuclei are unpolarized is established. "The author expresses thanks to O. G. Syt'enko for valuable consultation and advice. The author thanks V. F. Kharchenko for profitable discussion." Orig. art. has: 39 numbered equations.

ASSOCIATION: Universytet im. Ya. Ye. Purkin, Brno CSSR (Brno University)

SUBMITTED: 28Aug63

DATE ACQ: 08Apr64

ENCL: 00

SUB CODE: NS,PH

NO REF Sov: 002

OTHER: 006

Card 2/2

TSEYROV, Ye. M.

Electricity
circuit breakers

DECEASED

1961

1964

KOPANEV, V.I., kind.med.nauk; TSEYROVA, L.T.

New method of examining the gastrointestinal tract in man; a review
of literature. Sov. med. 28 no.7:89-92 Jl. '64.
(MIRA 18:8)

Tseysler

RUMANIA / Cultivated Plants. Medicinal and Essential-Oil Bearing L-8

Abs Jour : Ref Zhur - Biol., No 6, March 1957, No 22857

Author : Popesku, Buzhoryan, Lupya, Tseysler, Reshkanu

Inst : Not Given

Title : Economic Significance of Rose Hips.

Orig Pub : Studii si cercetari stiint. Acad. RPR. Baza Timisoara, 1955:
ser. 2, 2, No 1-4, 25-44

Abstract : In the western part of the Rumanian Peoples Republic studies were conducted in 1952-1953 on the ascorbic acid content of rose hips, the conditions of its formation and decomposition. Eight species and 15 varieties were studied. It was found that Rosa canina L. (7 varieties) contained 0.4-2.7% vitamin C; R. dumalis Bechst (3 varieties) 0.95-2.57%; R. dumetorum Thuill (1 variety) 1%; R. glauca W. (3 varieties) 1.37%; R. rubiginosa L. (1 variety) 0.09%; R. jundzilli (1 variety) 0.45%; R. spinosissima L. (1 variety) 1.29%; and R. pendulina L. 96 varieties 3-11%. The maximum amounts of vitamin C are contained during the period of fruit ripening; in unripe and overripe fruit

Card : 1/2

RUMANIA / Cultivated Plants. Medicinal and Essential-Oil Bearing

L-8

Abs Jour : Ref Zhur - Biol., No 6, March 1957, No 22857

there is less vitamin C. It is recommended that rose hips
be utilized as food and for their vitamin content in some
products, and also that areas for rose-hip cultivation be
widened.

Card : 2/2

TSEYSLER, A.I.

SHAPSHAL, B.G.; TITKOV, A.I.; TSEYSLER, A.I.

Centrifugal oil cleaning in automobile engines. Avt. i trakt.prom.
no.10:11-16 0 '56. (MIRA 10:1)

1. Ural'skiy avtozavod.
(Automobiles--Engines--Oil filters)

ZHARIKOV, I.I., inzh.; TSEYSIER, F.F., inzh.; TARASOV, B.G., inzh.

Manometric method of controlling nine interferometers. Bezop.
truda v prom. 8 no.12:48-49 D '64. (MIRA 18:3)

TSEYSLER, V.M.

Hiatus between the Turonian and Senoman stage in southwestern spurs
of the Gissar Range. Trudy VNIGNI no.35:81-84 '61. (MIRA 16:7)
(Gissar range--Geology, Stratigraphic)

TSEYSLER, V.M.

Some results of studying the tectonics of the southwestern spurs
of the Gissar Range (Guzar, Dekhkanabad and Baysun areas).
(MIRA 16:10)
Trudy MGRI 39:11-18 '63.

TSEYSLER, V.M.

Interrelationship of Bukhara and Suzak sediments in the
southwestern spurs of the Gissar Range. Biul. MOIP Otd.
geol. 37 no.6:62-66 N-D '62. (MIRA 16:8)

MURATOV, N.V., etv. red.; BELYAYEVSKIY, N.S., red.; GAMKRELIDZE,
I.D., red.; MILANOVSKIY, Ye.Ye., red.; KHAIN, V.Ye., red.;
TSEYSLER, V.M., red.

[Himalayan and Alpine orogenesis] Gimelatskii i Al'piiskii
orogenes. Moskva, Nedra, 1964. 331 p. (Mezhdunarodnyi
geologicheskii kongress, 22d sessiya. Doklady sovetskikh
geologov, problema 11) (MIKA 18:1)

1. Natsional'nyy komitet geologov Sovetskogo Soyuza.

TSEYSLER, V.M.

New data on the stratigraphy and distribution of lower Cretaceous sediments in the southwestern Crimea. Izv.vys.ucheb.zav.; geol.i razv. 2 no.3:19-30 Mr '59. (MIRA 12:12)
(Crimea--Geology, Stratigraphic)

ARKHIPOV, I.V.; USPENSKAYA, Ye.A.; TSEYSLER, V.M.

Connection between lower Cretaceous and upper Jurassic sediments within
the southeastern area of the Crimean mountains. Biul. MOIP. Otd. geol.
33 no.5:81-90 S-0 '58. (MIRA 12:1)
(Crimea--Geology, Structural)

SOV/5-58-5-6/20

AUTHOR: Arkhipov, I.V., Uspenskaya, Ye.A. and Tseyler, V.M.

TITLE: On the Character of the Correlation Between the Lower Cretaceous and Upper-Jurassic Deposits in the South-Western Part of the Gornyy Crimea. (O kharaktere vzaimootnosheniya nizhnemelovykh i verkhneyurskikh otlozheniy v predelakh yugo-zapadnoy chasti Gornogo Kryma)

PERIODICAL: Byulleten' Moskovskogo obshchestva ispytateley prirody, Otdel geologicheskiy, 1958, Nr 5, pp 81 - 90 (USSR)

ABSTRACT: The article deals with geological research on the correlation of the Lower-Cretaceous and Upper-Jurassic deposits in the south-western part of the Gornyy Crimea, especially in the basin of the Chernaya River. The authors found that ~~Wianian-Hauterivian~~ rock formations fill the deeply eroded depressions in the Kimmeridge-Tithonian rocks. The character of the ~~Wianian-Hauterivian~~ Lower-Cretaceous deposits on the underlying Upper-Jurassic rocks, shows that after the formation of the Kimmeridge-Tithonian layers, the whole region underwent a sharp elevation process and was subjected to an active erosion on the earth surface. The intensity of these

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On the Character of the Correlation Between the Lower Cretaceous and
Upper-Jurassic Deposits in the South-Western Part of the Gornyy Crimea.

erosive processes in specific parts could be explained only by the heterogeneity of the Kimmeridge-Tithonian stratum, composed of rocks of different resistance to erosion. In particular, the deepest basin was formed in the limits of the present Baydar valley, this part having been filled with flysh formations. The basin of the Varnaut valley was also formed in this way. In the following transgression, at the beginning of the Lower-Cretaceous period, the whole region again disappeared under the sea with such speed that the sea did not ~~smoothen~~ the eroded surface which was then filled with the Valangian-Goterive argillaceous deposits. The following geologists are mentioned by the author: A.G. Glukhov, M.V. Churinov, S.N. Mikhaylovskiy, G.Ya. Krym-gol'ts, G.F. Veber, V.V. Drushchits, M.S. Eristavi, M.V. Muratov and I.M. Tsypina. There are 2 drawings, 1 map, 3 diagrams and 15 references, 14 of which are Soviet and 1 Swiss.

Card 2/2

TSEYSLER, V.M.

Recent tectonic pattern of the southwestern spurs of the Gissar
Range. Izv.vys.ucheb.zav.; geol. i razv. 4 no.12:30-39 D '61.
(MIRA 15:2)

1. Moskovskiy geologorazvedochnyy institut imeni S.Ordzhonikidze.
(Gissar Range—Geology, Structural)

TSEYSLER, V.M.

Characteristics of faulting in the southwestern spurs of the
Gissar Range. Izv. vys. ucheb. zav.; geol. i razv. 8 no.9;
15-20 S '65. (MIRA 18;9)

1. Moskovskiy geologo-razvedochnyy institut imeni S. Ordzhonikidze.

TSEYSLER, V.M.

Block tectonics of the southwestern spurs of the Gissar Range.
Izv.vys.ucheb.zav.; geol.i razv. 5 no.8:21-33 Ag '62.
(MIRA 15:11)
1. Moskovskiy geologorazvedochnyy institut im. S.Ordzhonikidze.
(Gissar Range--Geology, Structural)

TSEYSLER, V.M.

Boring mollusks from Albian sediments in the Crimea. Biul. MOIP. Otd.
(MIRA 11:11)
geol. 33 no. 3:132-133 My-Je '58.
(Crimea -- Mollusks, Fossil)

SOV/5-33-1-22/25

AUTHORS: Arkhipov, I.V., Muratov, M.M., Uspenskaya, Ye.A. and Tseyler, V.M.

TITLE: New Data on the Geology of the Upper Crimea (Novyye dannyye po geologii Gornogo Kryma)

PERIODICAL: Byulleten' Moskovskogo obshchestva ispytateley prirody, Otdel geologicheskiy, 1959, Vol 33, Nr 1, p 156 (USSR)

ABSTRACT: The authors sum up the report read on 26 November 1957 in the geological section of the Moscow Society of Naturalists. The elevation of the south western part of the Upper (Gorny) Crimea occurred before the Cretaceous period, and it was subjected to a deep erosive process. The eroded relief was then submerged by the sea and filled with argillaceus sediments of the Valangian stage. Before the Aptian stage the elevation reoccurred, succeeded by a new submersion. Middle- and Aptian rocks occur in the depressed parts. The Middle- and Upper Albion deposits occurring in the base of the Upper Cretaceous complex also bear traces of erosion.

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TSEYTGAMPL¹, Yan

Sheet straightening machines of the KhRM1600/3.15 and
KhRM2000/6.3 type. Kuz.-shtam. proizv. 5 no.10:43-46
0 '63. (MIRA 16:11)

TSEYTIN, G., kand.fiz.-matem.nauk

Translating machines. Radio no.5:6 My '63.
(Translating machines)

(MIRA 16:5)

TSEYTIN, G. Kh.

~~TSEYTIN, G. Kh.~~ CHUDNOVSKIY, A.F.

Determining soil temperature on the basis of given air temperatures.
Trudy GGO no.37:20-27 '52. (MIHA 11:1)
(Soil temperature)

TSEYTIN, G. KH.; AYZENSHTAT, B.A.; KIRILLOVA, T.V.; LAYKHTMAN, D.L.; OGNEVA, T.A.;
TIMOFEEV, M.P.

"Measurement of the Heat Balance of the Active Surface for the Case of
Irrigation"
Tr. Gl. Geofiz. Obervatorii, No 39, 37-60, 1953

The authors present data on the components of the heat and radiative balance of the active surface in a semidesert and in an irrigated field. The data was obtained by an expedition of the Main Geophysical Observatory in July 1952 in the sovkhoz "Pakhta-Aral," a collective farm in Central Asia. It was found that heat exchange in soil practically does not change under the influence of irrigation. (RZhGeol, No 3, 1954)

SO: W-31187, 8 Mar 55

TSEYTIN, G. KH., and LAYTKHTMAN, D. L.

"Variation in the Temperature of the Ground Layer of the Atmosphere During Irrigation"
Tr. Gl. Geofiz. Observatorii, No 39, 219-227, 1953

The effect of irrigation is studied as an effect resulting from variations in the heat content of moving air in consequence of variations in the conditions surrounding heat exchange in the underlying surface. A procedure is developed for computing the relationships of these variations. (PZhGeol, No 3, 1954)

SO: W-31167, 8 Mar 55

SHEKHTER, F.N.; TSEYTIN, G.Kh.

A more precise method for precalculating. Trudy GGO no.53:26-35 '55.
(Atmospheric temperature) (MIRA 9:8)

SHEKHTER, F.N.; TSEYTIN, G.Kh.

Soil temperature and depth of soil freezing during the winter.
(MILRA 9:8)
Trudy GGO no.53:44-65 '55.
(Frozen ground) (Soil temperature)

Name : TSEYTIN, G. KH.

Dissertation : Theory of the transformation of air masses
considering horizontal diffusion as a
factor

Degree : Cand Phys-Math Sci

Defended At : Main Administration of the Hydrometeorological Service of the Council of
Ministers USSR, Main Geophysical
Observatory imeni A. I. Voyeykova

Publication Date, Place : 1956, Leningrad

Source : Knizhnaya Letopis' No 5, 1957

sov/36-60-8/10

AUTHOR: Tseytin, G. Kh.

TITLE: Computing the Coefficient of Temperature Conductivity and the Flow of Heat Into Soil on the Basis of Mean Temperatures (O vychislenii koeffitsiyenta temperaturoprovodimosti i potoka tepla v pochvu po osrednennyim temperaturam)

PERIODICAL: Trudy Glavnay geofizicheskoy observatorii, 1956, Nr 60, pp 67-79
(USSR)

ABSTRACT: Due to the vertical inhomogeneity of the soil, the velocity of temperature penetration into it is variable; moreover the time factor is not negligible. Yet for many reasons existing formulas are unreliable and the desired accuracy causes many complications in computation. Through a certain standardization of procedure and by applying an extended mathematical (analytical and graphical) analysis the author offers a better approach to the problems and better results. There are 7 tables, and 6 Soviet references.

Card 1/1

TSEYTN, G. Kh.

36-71-13/16

AUTHOR: Tseytin, G. Kh.

TITLE: Enquiry Into Transformation of Air Masses and the Theory
Evaporation (Nekotoryye voprosy transformatsii
vozdushnykh mass i teorii ispareniya)

PERIODICAL: Trudy Glavnay geofizicheskoy observatorii
1957, Nr 71, pp. 169-183 (USSR)

ABSTRACT: The problem of stationary transformation of air masses
is treated mathematically for a non-plane surface allowing for
horizontal turbulent exchange on the assumptions that 1) the
velocity of the wind and the coefficients of turbulent diffu-
sion are exponential functions of height and increase without
limit (or to a certain height which is called "height of
break"), 2) the original distribution of air mass is an arbi-
trary function of height and horizontal coordinates and 3) the
transformed substance (temperature, humidity, etc.) is given
for near-ground conditions as a function of horizontal coordi-
nates. The general solution is adequately in the form of charts
and tables designed for all desired parameters under the origi-
nally imposed limiting conditions. None the less, the practical

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Enquiry Into Transformation of Air (Cont.) 36-71-13/16
application of such tables meets with considerable difficulties
as the number of parameters involved is considerable. Particu-
lar cases of air mass transformation over a strip of finite
width, distribution of moisture over limited surfaces of square,
rectangular and other shapes, and local and total evaporation
from such surfaces are discussed. Determination of reduction
coefficients as a characteristic of evaporation is given con-
sideration. There are 2 figures, 3 tables and 14 references of
which 12 are UESR.

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Card 2/2

TSEYTIN, G.Kh.

Some methods of determining the coefficient of horizontal turbulent diffusion. Trudy GGO no.77:76-78 '58. (MIRA 12:4)
(Atmospheric turbulence)

ISAYIN, G.KH.

PHASE I BOOK EXPLOITATION

SOV/4641

Leningrad. Glavnaya geofizicheskaya observatoriya

Voprosy fiziki prizemnogo sloya vozdukha (Problems in the Physics of the Near-Surface Air Layer) Leningrad, Gidrometeoizdat, 1960. 161 p.
(Series: Its: Trudy, vyp. 94) Errata slip inserted. 850 copies printed.

Sponsoring Agencies: Glavnaya geofizicheskaya observatoriya imeni A.I. Voyeykova;
Glavnoye upravleniye gidrometeorologicheskoy sluzhby pri Sovete Ministrov
SSSR.

Ed. (Title page): D.L. Laykhtman, Doctor of Physics and Mathematics; Ed.
(Inside book): Yu.V. Vlasova; Tech. Ed.: N.V. Volkov.

PURPOSE: This publication is intended for meteorologists specializing in the lower layers of the atmosphere. It may also be of interest to agronomists, construction engineers, and other specialists whose activities are influenced by atmospheric conditions.

COVERAGE: This issue of the Transactions of the Main Geophysical Observatory contains 18 articles dealing mainly with problems of the physics of the near-surface air layer. Correlations between the surface wind and geostrophic wind are examined and the results of both theoretical calculations and Card 1/4 S

Problems in the Physics (Cont.)

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experimental investigations given. Individual articles analyze the temperature regime of the active surface of soil and the factors determining the thermal conditions of the boundary layer. Results of fog investigation are presented in two articles. In addition, some problems of methods in the experimental investigation of the near-surface layer are elucidated. No personalities are mentioned. References follow each article.

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Tseytin, G.Kh., and L.R. Orlenko. Stationary Distribution of Wind, Temperature, and Turbulent Exchange in the Boundary Layer Under Different States of Stability	8
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TSEYTIN, G.Kh.

Relation between the temperature of the active surface and the
air temperature in the instrument shelter. Trudy GGO no.94:
62-75 '60. (MIRA 13:5)
(Soil temperature) (Snow--Temperature)

KRASNOVA, Klara Stepanovna; TSEYTIN, G.Kh., otv. red; YASNOGORODSKAYA,
M.M., red.; SOLOVEYCHIK, A.A., tekhn. red.; BRAYNINA, M.I., tekhn.
red.

[Atlas of meteorological nomograms] Atlas meteorologicheskikh nomo-
gram. Leningrad, Gidrometeor.izd-vo, 1961. 42 p. (MIRA 14:12)
(Meteorology--Tables, etc.)

TSEYTIN, G.Kh.

Structure of the boundary layer under nonstationary conditions.
Trudy GGO no.107:132-147 '61. (MIRA 14:10)
(Meteorology)

TSEYTIN, G.Kh.

Distribution of contamination from a high altitude source. Trudy Len.
(MIRA 18:1)
gidromet.inst. no.18:8-33 '63.

Calculation of some parameters of the vertical profile of wind velocity
appr... to the problem of the distribution of contamination. Ibid.:86-
111

TSEYTIN, G. Kh.

Structure of the boundary layer of the atmosphere under
nonstationary conditions. Part 2. Trudy GGO no. 144:150-177
(MIRA 17:6)
'63.

TSEYTIN, G.Kh.

Distribution of pollution from an upper source. Trudy Len.
gidromet. inst. no.15:10-31 '63.

Effect of breezes on the diffusion of passive pollution
from a continuous point source. Ibid. 281-96
(MIRA 17:1)

L 14182-66

EWT(1)/FCC

GW

ACC NR: AT6004145

SOURCE CODE: UR/2531/65/000/167/0003/0028

34
B+1AUTHOR: Klyuchnikova, L. A.; Laykhtman, D. L.; Tseytin, G. Kh.ORG: Main Geophysical Observatory, Leningrad (Glavnaya geofizicheskaya observatoriya)TITLE: Calculation of the vertical wind profile in the boundary layer of the atmosphere ^{12,44,55}SOURCE: Leningrad. Glavnaya geofizicheskaya observatoriya. Trudy, no. 167, 1965.
Fizika pogranichnogo sloya atmosfery (Physics of the boundary layer of the atmosphere), 3-28

TOPIC TAGS: atmospheric boundary layer, wind profile, atmospheric turbulence, mathematical analysis

ABSTRACT: This paper is a further development of the theoretical model for the structure of the boundary layer of the atmosphere in stationary conditions as a function of external parameters. A mathematical model is proposed for the coefficient of turbulence and a system of equations is given for determining the vertical

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ACC NR: AT6004145

profiles of meteorological elements of the boundary layer under stationary conditions based on external parameters. This system of equations accounts for motion, heat transfer in the soil and in the atmosphere and humidity transfer in the atmosphere. The initial and boundary conditions for the problem are stated and a general solution is given. Formulas are derived for calculating the vertical wind profile in the boundary layer of the atmosphere and a computational scheme is proposed for determining the various parameters appearing in these formulas. Examples are given illustrating the effect of the coefficient of turbulence on the structure of the boundary layer of the atmosphere. It is found that the coefficient of turbulence increases with altitude according to a power law, reaching a maximum at some point and then decreasing with altitude. An appendix to the article gives tables of the functions appearing in the formulas derived. Orig. art. has: 2 figures, 6 tables, 70 formulas.

SUB CODE: 08/ SUBM DATE: 00/ ORIG REF: 009/ OTH REF: 000

Card 2/2

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ACC NR: AT6021506

(N)

SOURCE CODE: UR/2531/66/000/187/0044/0053

AUTHOR: Vager, B. G.; Tsaytin, G. Kh.

27

25

B+1

ORG: none

TITLE: Structure of the atmospheric boundary layer under stationary conditions
(nonlinear problem)SOURCE: Leningrad. Glavnaya geofizicheskaya observatoriya. Trudy, no. 187, 1966.
Fizika pogranichnogo sloya atmosfery (Physics of the atmospheric boundary layer), 44-53

TOPIC TAGS: atmospheric boundary layer, atmospheric turbulence, turbulent diffusion

ABSTRACT: A scheme is presented for computing some meteorological
structure of the atmospheric boundary layer under stationary
conditions (nonlinear problem). IN: Glavnaya geofizi-
cheskaya observatoriya. Fizika pogranichnogo sloya atmosfery
(Physics of the surface boundary layer of the atmosphere),
1966, 44-53. (ITS: Trudy, no. 187, 1966).A scheme is presented for computing some meteorological
characteristics of the boundary layer of the atmosphere
for various states of thermal stability, with turbulent
energy diffusion taken into account. Since diffusion of
turbulent energy can be neglected in the special case of
neutral stratification, this method can be reduced to a
numerical scheme for computation.

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The problem reduces to solving the following system of equations of motion under horizontally homogeneous conditions:

$$\left. \begin{aligned} \frac{d}{dz} h(z) \frac{du}{dz} + 2\omega_x v(z) &= 0 \\ \frac{d}{dz} h(z) \frac{dv}{dz} - 2\omega_x [u(z) - V_g] &= 0 \end{aligned} \right\} \quad (1)$$

the equation of the influx of heat

$$ah(z) \left[\frac{dT}{dz} + \gamma_f \right] = - \frac{P_0}{c_p \rho} - \frac{R(z) - R(0)}{c_p \rho} \quad (2)$$

and the equations of turbulent energy balance

$$h(z) \left[\left(\frac{du}{dz} \right)^2 + \left(\frac{dv}{dz} \right)^2 \right] - \frac{g}{T} ah(z) \left[\frac{dT}{dz} + \gamma_p \right] - c_0 \frac{b^2(z)}{h(z)} + a_1 \frac{d}{dz} h(z) \frac{db(z)}{dz} = 0 \quad (3)$$

$$h(z) = l(z) \sqrt{b(z)} \quad (4)$$

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The expression for the scale of turbulence $\ell(z)$ (according to D. L. Laykhtman and S. S. Zilitinkevich) is

$$\ell(z) = -2c_0^{\frac{1}{4}} \times \frac{F(z)}{\frac{dF(z)}{dz}}, \quad (5)$$

$$F(z) = \left(\frac{du}{dz}\right)^2 + \left(\frac{dv}{dz}\right)^2 - \frac{ag}{T} \left(\frac{dT}{dz} + \gamma_p\right). \quad (6)$$

The following notation is adopted in equations (1)–(6): 2
 $u(z)$, $v(z)$ are the horizontal components of the wind velocity
(the x-axis is directed along the isobar); $k(z)$ is the turbulence factor; v_g is the velocity of the geostrophic wind;
 $T(z)$ is the absolute air temperature; γ_p is the equilibrium temperature gradient; P_0 is the value of the turbulent heat flux at ground level; $R(z)$ is the radiant heat flux; $b(z)$ is the energy of turbulent pulsations; a is the ratio of the turbulence factor for heat to the turbulence factor for momentum; and c_0 and a_1 are constants. The remaining notation is standard. In this formulation of the problem, it is considered that the values of the radiation for $R(z)$ and turbulent flux near the ground P_0 are given. Thus, the system is closed with six equations (1–5) available for six unknowns: $u(z)$, $v(z)$, $k(z)$, $\ell(z)$, $b(z)$, and $T(z)$.

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The boundary conditions are as follows:

$$u(z) = v(z) = 0 \text{ when } z = z_0 \quad (7)$$

$$u(z) \rightarrow V_s, \quad v(z) \rightarrow 0, \quad z \rightarrow \infty \quad (8)$$

$$k(z)|_{z=z_0} = v_s z_0 \quad (9)$$

Where v_s is the dynamic velocity, and:

$$v_s^2 = k(z) \sqrt{\left(\frac{du}{dz}\right)^2 + \left(\frac{dv}{dz}\right)^2} \Big|_{z=z_0} \quad (10)$$

$$k(z) \frac{db(z)}{dz} \Big|_{z=z_0} = 0, \quad (11)$$

$$b(z) \rightarrow 0, \quad z \rightarrow \infty \quad (12)$$

z_0 is the surface roughness parameter. The boundary condition (11) means that turbulent energy does not penetrate the underlying surface.

A scheme for solving the problem is given for the general case. First, the dimensionless height and the desired functions are introduced by the formulas:

$$\eta = V_s \int_{z_0}^z \frac{dz}{k(z)} = \frac{2v_s}{V_s} \int_{z_0}^z \frac{dz}{\beta(z)}, \quad (13)$$

$$\beta(z) = \frac{2v_s}{V_s^2} k(z), \quad (14)$$

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$$u_0(\eta) = \frac{u(\eta)}{\sqrt{\epsilon}}$$

$$v_0(\eta) = \frac{v(\eta)}{\sqrt{\epsilon}}$$

$$\Phi(\eta) = \frac{c_0^2}{\nu^2} b(\eta).$$

(15)

(16)

Then, instead of equations (1), (3), and the boundary conditions (7), (8), (11), and (12), we get

$$\frac{dO(\eta)}{d\eta^2} - i\beta(\eta) O(\eta) = 0,$$

(17)

$$\frac{sd^2\Phi(\eta)}{d\eta^2} - \Phi^2(\eta) + E(\eta) = 0,$$

(18)

$$O(\eta)|_{\eta=0} = 1,$$

(19)

$$O(\eta) \rightarrow 0,$$

(20)

$$\Phi(\eta) \rightarrow 0,$$

(21)

$$\left. \frac{d\Phi(\eta)}{d\eta} \right|_{\eta=0} = 0,$$

(22)

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Where

$$\bar{G}(\eta) = 1 - u_0(\eta) - i v_0(\eta), \quad (23)$$

$$\begin{aligned} E(\eta) &= \left(\frac{du_0}{d\eta} \right)^2 + \left(\frac{dv_0}{d\eta} \right)^2 - s_1 \beta^2(\eta) \left[\frac{dT}{dz} + \gamma_p \right] = \\ &= \left(\frac{du_0}{d\eta} \right)^2 + \left(\frac{dv_0}{d\eta} \right)^2 + s_2 \beta(\eta) P(z), \end{aligned} \quad (24)$$

$$P(z) = -\alpha c_p \rho k(z) \left[\frac{dT}{dz} + \gamma_p \right], \quad (25)$$

$$s = \frac{\alpha_1}{V c_0}, \quad (26)$$

$$s_1 = \frac{\alpha_2}{4 \omega_s^2 T}, \quad (27)$$

$$s_2 = \frac{E}{2 b_s c_p \rho T V^2}, \quad (28)$$

On the basis of (4), (5), (9), and (10), we find that

$$\beta(\eta) = m_0 \sqrt{E(\eta)} e^{\int_{\eta_0}^{\eta} V(\eta') d\eta'} \quad (29)$$

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where

$$m_0 = \frac{2\omega_r z_0}{v_a \sqrt{1 + \frac{xz_0}{L}}}, \quad m_0 \approx \frac{2\omega_r z_0}{v_a} \quad (30)$$

for $z_0 \ll L$, where $L = \frac{g}{T} \cdot \frac{P_0}{c_p \rho}$ is the height of the

surface boundary sublayer, according to Obukhov and Monin. If stratification is neutral, when $L = \infty$, (30) becomes exact. When dT/dz or $P(z)$ is given for the case of an atmosphere which is not in a state of equilibrium, the system of equations, in dimensionless form, contains only the two parameters m_0 and s_1 (or s_2), and universal constants.

When the state of the atmosphere is neutral ($P(z) \equiv 0$), the system depends on only one parameter m_0 which can be expressed by the Rossby parameter

$$Ro = \frac{V_g}{2\omega_r z_0}. \quad (31)$$

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ACC NR: AT6021506

Thus, the scheme for solving the system can be written, in the general case, as follows:

- (1) An approximate profile of the turbulence factor $\beta(n)$ is given;
- (2) The equation of motion (17) is solved by the selected $\beta(n)$ with boundary conditions (19)–(20);
- (3) The profile $E(n)$ is calculated by formula (24) with s_1 (or s_2) given and the profile dT/dz or $P(z)$;
- (4) The profile $\phi(n)$ is determined by formula (18), making use of $E(n)$ and boundary conditions (21)–(22);
- (5) A new profile $\beta(n)$ is determined by formula (29), using the given profile m_0 and profiles $\phi(n)$ and $E(n)$.

If the new profile differs noticeably from the preceding one, this procedure is repeated with the new profile, starting with step 2.

A simplified numerical method of computation is given for the case of neutral stratification (without taking turbulent-energy diffusion into consideration). In this case, equation (18) takes the form

$$\Theta(\eta) - \Phi^2(\eta) = 0, \quad (32)$$

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where

$$E(\eta) = \left(\frac{du_0}{d\eta} \right)^2 + \left(\frac{dv_0}{d\eta} \right)^2 \quad (33)$$

Thus, equation (29) is replaced by

$$\beta(\eta) = m_0 \sqrt{E(\eta)} e^{\int_{\eta_0}^{\eta} \frac{1}{E(\eta')} d\eta'} \quad (34)$$

Reducing the linear boundary problem to Cauchy problems, one can seek the desired function $\phi(\eta)$ in the form

$$\phi(\eta) = G_1(\eta) - \frac{G_1(\eta_H)}{G_2(\eta_H)} G_2(\eta), \quad (35)$$

where $G_1(\eta)$ and $G_2(\eta)$ are solutions of equation (17) with the boundary conditions

$$G_1(\eta)|_{\eta=0} = 1, \quad \frac{dG_1(\eta)}{d\eta}|_{\eta=0} = 0, \quad (36)$$

$$G_2(\eta)|_{\eta=0} = 0, \quad \frac{dG_2(\eta)}{d\eta}|_{\eta=0} = 1, \quad (37)$$

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and η_0 is a sufficiently great height. Then

$$\left. \begin{array}{l} Q_1(\eta) = A(\eta) + iB(\eta) \\ Q_2(\eta) = C(\eta) + iD(\eta) \end{array} \right\} \quad (38)$$

Then, we get instead of (17), (36), and (37):

$$\left. \begin{array}{l} \frac{d^2A(\eta)}{d\eta^2} = -\beta(\eta)B(\eta) \\ \frac{d^2B(\eta)}{d\eta^2} = \beta(\eta)A(\eta) \\ \frac{d^2C(\eta)}{d\eta^2} = -\beta(\eta)D(\eta) \\ \frac{d^2D(\eta)}{d\eta^2} = \beta(\eta)C(\eta) \end{array} \right\} \quad (39)$$

$$A(\eta)|_{\eta=0} = 1, \quad B(\eta)|_{\eta=0} = 0$$

$$\left. \begin{array}{l} \frac{dA(\eta)}{d\eta}|_{\eta=0} = 0, \quad \frac{dB(\eta)}{d\eta}|_{\eta=0} = 0 \\ C(\eta)|_{\eta=0} = 0, \quad D(\eta)|_{\eta=0} = 0 \end{array} \right\}$$

$$\left. \begin{array}{l} \frac{dC(\eta)}{d\eta}|_{\eta=0} = 1, \quad \frac{dD(\eta)}{d\eta}|_{\eta=0} = 0 \end{array} \right\} \quad (40)$$

The wind velocity components $u_0(\eta)$ and $v_0(\eta)$ are expressed

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by the formulas

$$\left. \begin{array}{l} u_0(\eta) = 1 - A(\eta) + L(\eta_H)C(\eta) - \bar{L}(\eta_H)D(\eta) \\ v_0(\eta) = -B(\eta) + \bar{L}(\eta_H)D(\eta) + \bar{L}(\eta_H)C(\eta) \end{array} \right\} \quad (41)$$

Where

$$\left. \begin{array}{l} L(\eta_H) = \frac{A(\eta_H)C(\eta_H) + B(\eta_H)D(\eta_H)}{C(\eta_H)^2 + D(\eta_H)^2} \\ \bar{L}(\eta_H) = \frac{B(\eta_H)C(\eta_H) - A(\eta_H)D(\eta_H)}{C(\eta_H)^2 + D(\eta_H)^2} \end{array} \right\} \quad (42)$$

The Adams method was used for numerical integration of the system (39)-(40) with modified coefficients in which differences up to the sixth order inclusive were taken into account. This permitted attaining quite high accuracy in determining not only the velocity components, but their derivatives which determine the vertical profiles of characteristics of turbulence $k(z)$, $b(z)$, and $\ell(z)$ with a comparatively small number of iterations (several tens). Applying the Adams method to system (39):

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$$\left. \begin{array}{l} A'_{j+1} = A'_j - h W_1(\beta, A_j) \\ B'_{j+1} = B'_j + h W_1(\beta, A_j) \\ A_{j+1} = A'_j + h A'_j - h^2 W_2(\beta, B_j) \\ B_{j+1} = B'_j + h B'_j + h^2 W_2(\beta, A_j) \end{array} \right\} \quad (43)$$

and similar formulas for C, D, C', and D'. The following notation is used here:

$$\left. \begin{array}{l} W_1(f_j) = \frac{1}{60480} [198721f_j - 447288f_{j-1} + 705549f_{j-2} - \\ - 688256f_{j-3} + 407139f_{j-4} - 134472f_{j-5} + 19087f_{j-6}] \\ W_2(f_j) = \frac{1}{120960} [139849f_j - 243594f_{j-1} + 369399f_{j-2} - \\ - 354188f_{j-3} + 207495f_{j-4} - 68106f_{j-5} + 9625f_{j-6}] \end{array} \right\} \quad (44)$$

In order to determine the initial six values of the desired functions, it is assumed that the forces of turbulent friction noticeably overlap the effect of the Coriolis force in the surface boundary sublayer of the air, and the latter can be taken into consideration approximately in the layer $0 \leq n \leq 6h$, and making use of (17)-(36)-(37);

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$$\left. \begin{array}{l} Q_1(\eta) \approx 1 + h \int_0^{\eta} \beta(t)(\eta - t) dt \\ Q_2(\eta) \approx \eta + h \int_0^{\eta} \beta(t)(\eta - t)t dt \end{array} \right\} \quad (45)$$

Representing the function $\beta(\eta)$ by the Lagrange interpolation formula for j ($j \leq 6$) of equispaced net points, the following formulas are obtained for computing the first seven ($j = 0, 1, \dots, 6$) initial points:

$$\left. \begin{array}{l} A'_j = 1, \quad A_j = 0 \\ B_j = h^2 (\bar{\beta} \bar{b}_j), \quad B'_j = h (\bar{\beta} \bar{b}'_j) \\ C_j = h j, \quad C'_j = 1 \\ D_j = h^2 (\bar{\beta} \bar{d}_j), \quad D'_j = h^2 (\bar{\beta} \bar{d}'_j) \end{array} \right\} \quad (46)$$

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where \bar{B} is the column vector

$$\bar{B} = \begin{bmatrix} \beta_0 \\ \beta_1 \\ \beta_2 \\ \beta_3 \\ \beta_4 \\ \beta_5 \\ \beta_6 \end{bmatrix}$$

(A)

and b_j , b_j' , d_j , d_j' are the j-th rows of matrices \bar{B} , \bar{B}' , \bar{D} , and \bar{D}' .

After computing the first seven points by formulas (46), further computations are carried out with formulas (43). After taking a sufficient number of steps and computing the values of the functions L and L' by formulas (42) for the last step $j = N$ ($n_H = Nh$), the values of the speeds $u_0(n)$, $v_0(n)$, and their derivatives are found at points n_j ($j = 0, 1, \dots, N$) by formulas (41).

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	0	0	0	0	0	0	0
1	1	0	0	0	0	0	0
3	6						
2	4	0	0	0	0	0	0
3	3						
39	27	27	3	0	0	0	0
40	10	40	20				
56	64	16	64	0	0	0	0
45	15	15	45				
1525	11875	625	3125	625	275	0	0
1000	2010	604	1008	1008	2010		
123	54	27	204	27	54	0	0
70	7	35	35	40	35		
0	0	0	0	0	0	0	0
1	1	0	0	0	0	0	0
2	2						
1	4	1	0	0	0	0	0
3	3	3					
3	9	9	3	0	0	0	0
8	8	8	8				
14	64	8	64	14	0	0	0
45	45	15	45	45			
95	125	125	125	125	95	0	0
288	96	144	144	96	288		
41	54	27	68	27	54	41	
140	35	140	35	140	35	140	

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(B)

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	0	0	0	0	0	0	0
D	1	1	0	0	0	0	0
	12	12	0	0	0	0	0
	2	16	2	0	0	0	0
	15	15	15	0	0	0	0
	9	81	81	9	0	0	0
	40	40	40	40	0	0	0
	16	1024	144	1024	16	0	0
	63	313	35	313	63	0	0
	1375	15	95	15	1375	0	0
	4032	448	2016	2016	448	4032	0
	9	972	243	72	243	972	0
	25	175	35	7	35	175	25
	0	0	0	0	0	0	0
D	1	1	0	0	0	0	0
	6	3	0	0	0	0	0
	4	2	0	0	0	0	0
	3	3	0	0	0	0	0
	3	27	27	39	0	0	0
	20	40	10	40	0	0	0
	64	16	64	56	0	0	0
	45	15	15	45	0	0	0
	275	625	3125	625	11875	1525	0
	2016	1008	1008	504	2016	1008	0
	54	27	204	27	54	123	0
	35	70	35	35	7	70	0

(B) (Cont.)

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When N is sufficiently large, the values of L_N and \bar{L}_N vary little, which can serve as a criterion for selecting the number of iterations N .

The zero approximation for the turbulence factor and the step size h are selected. It is assumed for the first profile that $k(z)$ is a linear function of height through the entire boundary layer.

$$k(z) = \alpha v_s z. \quad (47)$$

Then the following expression is obtained for β_j :

$$\beta_j = \frac{\pi^2}{m_0 R_0^2} e^{\frac{\pi^2}{2m_0 R_0} h}. \quad (48)$$

The Rossby parameter used in formula (48) is determined by using the exact solution of the equation of motion (17) with conditions (19) and (20), where the turbulence factor is computed by formula (47):

$$G(\eta) = 1 - u_0(\eta) - l v_0(\eta) = \frac{K_0 \left(\frac{2}{\pi} \sqrt{m_0} e^{\frac{\pi^2}{2m_0 R_0} h} \right)}{K_0 \left(\frac{2}{\pi} \sqrt{m_0} \right)}. \quad (49)$$

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Starting with (49) and making use of K_0 for small values of the argument, the parameters R_0 and m_0 are found to be connected by the formula

$$R_0 \approx \frac{\sqrt{\frac{\pi^2}{4} + \left(2c + \ln \frac{m_0}{x^2}\right)^2}}{m_0}, \quad (50)$$

where $c = 0.5772$, the Euler constant.

When selecting the step size h , it is assumed that the correction for the Coriolis force is very small in the layer $0 \leq n \leq 6h$.

On the basis of (45)

$$\delta = \int_0^{6h} \beta(t) \xi dt, \quad (51)$$

where δ is a small number on the order of 10^{-2} — 10^{-7} . Actual values of δ depend on the required accuracy. Using (51) and (48), the following transcendental equation is obtained for

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determining h:

$$e^{\frac{6xh}{m_0 R_0}} \left[\frac{6x^2 h}{m_0 R_0} - 1 \right] = \frac{x^2 \delta}{m_0} - 1. \quad (52)$$

Thus, the order of computation is as follows:

- 1) The value of R_0 is determined for the given value of the parameter m_0 , then the step size h by (50);
- 2) The zero profile A_0 is computed by formula (48);
- 3) The first seven values of A_j , A_j' , etc., are computed by formulas (46);
- 4) The remaining values of A for $j = 7, \dots, N$ are determined by formula (43);
- 5) The values of speeds $u_0(n)$, $v_0(n)$, and their derivatives at all points n , are computed by formulas (41), then the function $\epsilon(n)$ by (33);
- 6) A new profile of the turbulence factor $\beta(n)$ is determined by formula (34). If $\beta(n)$ differs noticeably from its preceding value, all operations are repeated, starting with step 3).

When the first profile $\beta(n)$ is computed, the formulas given

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here can be used to determine other characteristics of the boundary layer as functions of the dimensionless height η .

Their dependence on the real height z can be determined by:

$$z = z_0 \left[1 + Ro \int_0^\eta \theta(\eta) d\eta \right]. \quad (53)$$

This method was tested on an M-20 computer for different values of the Rossby parameter; 5-7 approximations were required to achieve convergence of $\theta(\eta)$ with an accuracy of several percent (see Figs. 1 and 2). Orig. art. has: 2 figures, 52 formulas and 1 table. [W.A. No. 50; ATD Report 111]

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